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M-TRAC

for rail safety



**FREE
BUT
SAFE**

RESPONSE TO THE
MINISTER OF TRANSPORT
POSITION PAPER
FREEDOM TO MOVE

TORONTO, CANADA
SEPTEMBER 1985

M-TRAC is a non-profit Metrowide umbrella organization of ratepayers, residents and other groups who following the Mississauga train derailment joined forces to investigate and advocate rail safety in densely populated urban areas. Members are committed to initiate legislative and other changes necessary to ensure public safety particularly in the transport of dangerous commodities by rail.

We gratefully acknowledge contributions from individuals, groups, municipalities and the Province of Ontario whose support made this submission possible.

M-TRAC

for rail safety

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September 9, 1985

Honourable Don Mazankowski PC MP
Minister of Transport
Place de Ville
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Dear Mr. Mazankowski:

Freedom to Move-A Framework for
Transportation Reform

The M-TRAC directors hereby respond to the July 1985 position paper Freedom to Move.

Deregulation for the purpose of encouraging increased efficiency and competition in the transport industry should receive wide support in Canada.

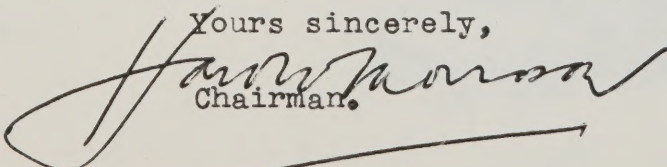
But we fear that deregulation, if treated in isolation, may lead to laxity in safety. The need to protect the people of Canada from the growing threat of toxic and explosive chemical spills must be imbedded in the law.

More particularly, the people in highly-congested urban areas where escape is virtually impossible need protection. We have seen few moves by this government to meet this urgent need, despite the pledges and promises that were made at the time of the General Election.

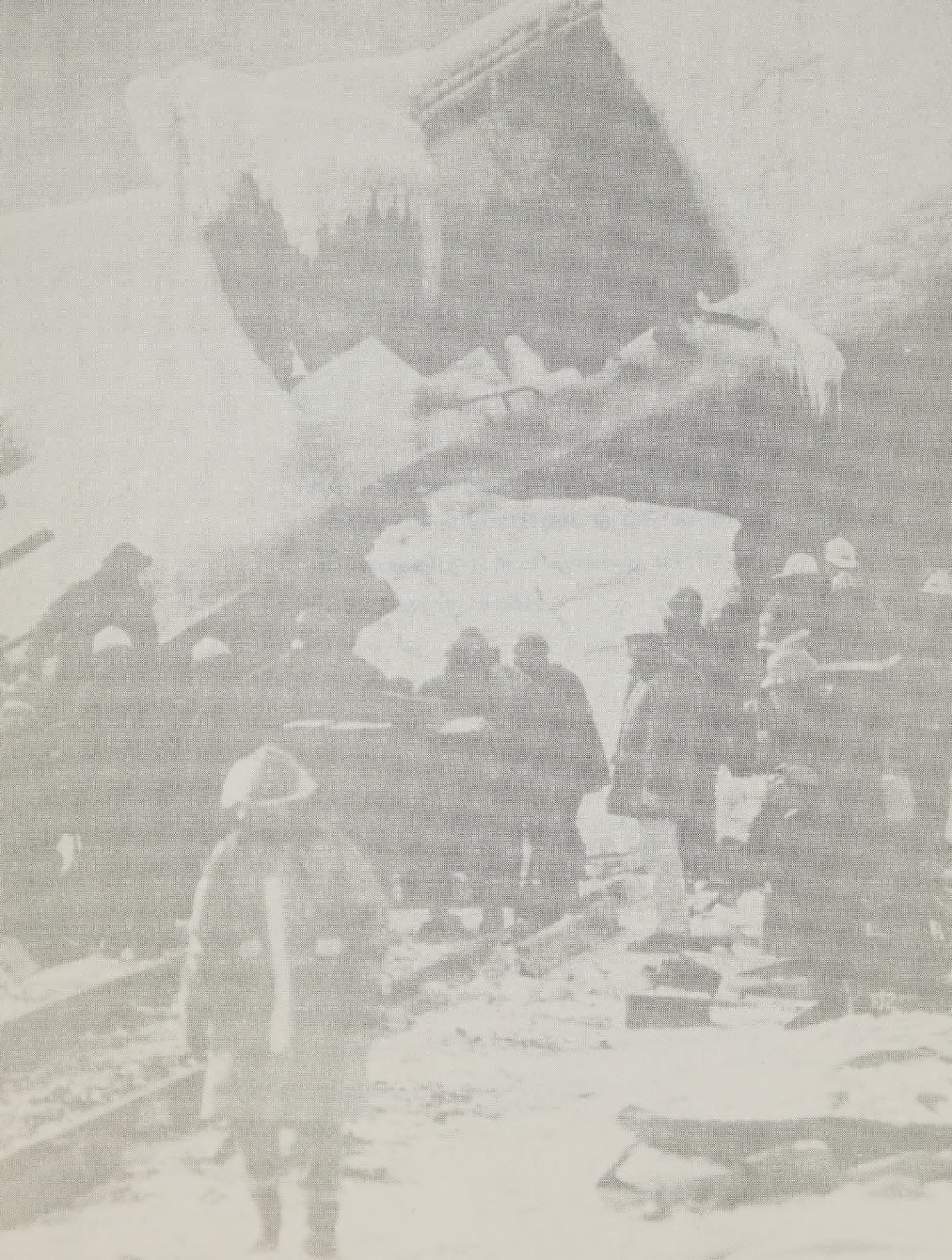
Daily we hear reports from our own area that respect and confidence in this government have begun to deteriorate. The promises made to the people of Metro Toronto that at least the speeds of the highly-dangerous chemical rail traffic in the urban area would be reduced have failed to materialize. Cabinet colleagues have called on the Minister of Transport to meet his pledges and these still have not been met.

Instead we get concessions and promises for the shippers. We believe it is time for this government to meet its obligations to the public in line with the warnings by investigating authorities. Transport reform must produce safety as well as economic strength.

Yours sincerely,


Chairman.





What I am confronting here is the health and safety of Canadian citizens in the face of an ever-increasing flow of dangerous traffic on the railways of Canada.


--John Magee, Chairman (retired)
Railway Transport Committee
Report of the MacMillan Yard
Inquiry 1985

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I. Principles of Reform

It may be argued that transport is, after all, simply another industry and should be treated as such. Why should a government intervene? Indeed, history demonstrates that government intrusion can be detrimental to industry and can lead to economic dislocation.

To that extent, stripping away unnecessary government regulation and restrictions should encourage the transport industry toward greater efficiency and greater ability to compete. That would benefit not only the industry but consumers as well.

It can also be argued that deregulation does not by itself assure corporate efficiency. That elusive goal of efficiency requires corporate ingenuity, combined with management and worker co-operation in the face of ever-sharpening competition.

But the transport system of Canada is no ordinary industry or series of industries. The system is the lifeblood of the country. Governments cannot simply turn away and allow the system to function on its own.

There is too much at stake, especially where the industry may hold a monopoly position or may follow self-centred policies which do not heed public need.

While this government may be commended for supporting competition and industrial efficiency in transport and especially rail transport, there are many unresolved problems which still require government intervention.

We question whether the Mazankowski formula, as enunciated in the July 1985 position paper Freedom to Move, concentrates sufficient attention on at least one serious problem within the industry -- the need to protect the public. We are concerned about the haulage of very dangerous cargoes through urban corridors flanked by high-density populations which can become trapped in the event of a serious accident.

This aspect of our concern is commonly known as rail safety. Everyone proclaims himself in favour of rail safety; all rail executives swear by it; all elected representatives immediately subscribe to it, and all sorts of promises are made to follow safety practices to the hilt.

But the reality of forcing reasonable safety measures on the railways mocks the pledges and the promises. The pages of judicial transcripts are studded with shocking disclosures of railway shortcomings. It is widely recognized that it has taken such a citizens' body as M-TRAC to press and obtain needed reform through years of judicial pursuit.

The shortcomings of the railways in the critical matter of safety in the transport of dangerous goods has been spelled out by the Grange Inquiry following the 1979 Mississauga derailment and more recently by the Magee Inquiry into the 1984 MacMillan Yard explosion.



Firemen evacuate a school and several homes after CN train derails near Hubbard, N.S. June 11, 1983. A tanker of flammable and dangerous naphtha leaked. (Photo: Canapress)

The point of these references is that freedom to operate and freedom to compete do not mean the railways are thereby freed of responsibilities to the public. Their operations are of major importance to the country; they have been granted major concessions through the federal Parliament and the public treasury. The railways in turn must recognize they have obligations to the public, including the very serious obligation of providing reasonable protection in the haulage of dangerous goods.

This obligation is not fully defined in the National Transportation Act of 1967 but it has been made clear by the Canadian Transport Commission in its initial report following the 1970 Safety Inquiry.

Now the question that arises from the Freedom to Move position paper is how does an obligation become enforceable? It becomes enforceable only through a specific government order or law. Amending the law to make it easier for the railways to compete through private deals is one thing; changing the law to allow the railways to avoid their obligations to the public is another.

We appeal to the government to ensure that in amending the National Transportation Act, the preamble states specifically that the concept of Freedom to Move is conditioned on the maintenance of a safe transport system; that safety must have the highest priority and that the government intends to ensure that such priority is imbedded in the law and enforced by government regulation and surveillance.

II. Amending the Law

When Parliament approved the National Transportation Act of 1967, public concern over environmental issues and the safety of chemical transport was relatively mute compared with the rising outcry today.

Over the years the flow of chemical traffic has swelled and the spreading dangers from such transport have alarmed the public. The chemical age has produced vast benefits for mankind but the price has been high. During the 1981 RTC Show Cause Hearing one commissioner pressed the question why there is so much concern over chemical traffic when the average lifespan has increased in this chemical age.

The answer is significant: chemicals may have increased the lifespan but they also have filled the hospitals with the suffering caused by slow-poisoning chemicals. Contamination and pollution have penetrated our water supplies and even the very air we breath. The public has become increasingly concerned and outraged. Citizens demand controls and they look to governments to provide the necessary protection.

So we agree that it is time to review the National Transportation Act, particularly as it affects the government's policy toward the national railways. The position paper Freedom to Move says that Section 3 of the NTA will be changed. We agree that it needs changing.

Changes should reflect not only the process of freer competition and a more open regulatory process but also the need for public protection.

Section 3 of the NTA states the national objective:

It is hereby declared that an economic, efficient and adequate transportation system making the best use of all available modes of transportation at the lowest total cost is essential to protect the interests of the users of transportation and to maintain the economic well-being and growth of Canada . . .

This wording has created problems for those seeking protection for the public. Surely the law-makers had safety in mind but for some reason it was not clearly spelled out in that preamble.

On occasion the railways have raised questions of the relationship between advocated safety measures and the more urgent need -- as the railways see it -- to ensure low costs and efficient economic returns.

We now have the opportunity to clarify the situation once and for all. There can be no argument that safety in transport must have the highest priority. There can be no compromise, no twisting of logic to suggest that safety must take a backseat among many factors, such as the prior need to compete, to ensure fast service, to cut manpower costs. Especially must this be true in the transport of dangerous goods, by whatever mode. The evidence is clear: more and more toxic and explosive chemicals are being transported from one place to another and more new chemicals are coming on the market, including some not fully pretested. (See Appendix A).

The hazards are compounded by the fact that a great deal of this dangerous traffic is being transported through high-density areas, such as Metropolitan Toronto, and the railways have made no effort to divert this traffic away from this population concentration. They simply have woven the chemical traffic into the cheapest transport arteries, whether that involves high densities or not.

The resulting risks have been heightened by the pressures of populations and the rising volume of chemical traffic. While some steps have been taken by governments to reduce this threat to population centres, the steps are generally considered inadequate. Some municipal critics have remarked bitterly that governments appear to await disasters before they take action. We earnestly plead that any such habitual hesitancy be avoided.

If there is sincerity in the pledge to protect the public, the first step in this government's advocacy of greater freedom for the railways is to ensure that safety is not compromised and that guarantees of safety are imbedded in the law.

Not only should the transportation system be economic, efficient and adequate but it must be safe. Safety must be judged not only on what the transport system perceives to be affordable but what the country actually requires as judged by independent safety experts.

That does not mean that the safety principle must be so rigid that the transportation system becomes paralyzed. Nor is it the aim of this response to make such heavy demands on the railways that costs become unbearable.

Common sense must prevail. But where there are clear indications that the railways are cutting corners in the transport of dangerous goods to the extent that the public faces heavy risks, the law must be capable of calling a halt and ordering reasonable protection. The law must be defined and enforceable. The transport system must be: economic, safe, efficient and adequate.

That must be spelled out in the preamble of the law.

III. Dismantling the Commission

Vast powers over Canadian railways are currently vested in a body known as the Canadian Transport Commission. It wears a number of hats: administrator, regulator, investigator, arbitrator and judge. It issues regulations and provides surveillance. If accidents result, it holds investigations and rules over those investigations.

It is the stated intention of this government as outlined in the Freedom to Move position paper to dismantle this Commission and revise and limit the powers of the replacement agency. We believe this action is long overdue.

In seeking to protect the public against major accidents such as the 1979 Mississauga derailment, we have been involved in many Commission hearings and investigations. Our conclusion is that the Commission has been the breeding ground for the maintenance of a paternal attitude toward the railways which has been detrimental to the public.

The results of one particular Commission investigation were such a shock to us that we were driven to appeal to the Privy Council. In our view the

commissioners appointed to that particular investigation did not reasonably and justly respond to the obvious needs for public protection.

We temper our criticism because of the stature and vision of two commissioners, John Gray and John Magee, who presided in their time over the Commission's Railway Transport Committee. Chairman Gray presided over the RTC decision in 1981 to take control over speeds of loaded chemical cars, to introduce hot-box detectors in populated centres, to demand more advanced production of roller wheel bearings and generally improve rail maintenance.



Firemen fight blaze resulting from locomotives ramming and shattering EMPTY propane tank cars in C.P. Rail's yard at Winnipeg, Man. on December 13, 1982 (Photo: Winnipeg Free Press)

Chairman Magee struck out boldly in his report on the 1984 MacMillan Yard investigation, demanding a slowdown in humping speeds on dangerous cargo, sweeping away the old fakery of EMPTY placards on tank cars containing residues of explosive and toxic chemicals and raising questions about Canadian confidence in dominating U.S. rail policy.

These were outstanding men, judicially balanced in their views but limited by circumstance to what they could accomplish. It could be argued that had the Commission acted in time, certain accidents might have been prevented. Those inside the Commission might counter by saying their activities were circumscribed by limited federal funds and limited staff. But, of course, those commissioners might have spoken out, as Chairman John Magee spoke out, when federal manpower curtailment threatened Commission safety enforcement.

On the whole, we found the Commission's operations slow and cumbersome. Its investigations were costly and none too productive. And the quality of the average appointee might have been enhanced if political patronage had not been so deeply involved.

The criticism of the Commission across the country, in its slow response to public need, would suggest it is time to bury the structure and replace it with a regulatory process more open, flexible and accessible to all Canadians, as the position paper states. (See Appendix B)

Our concern is the thrust of the intended new regulatory structure and the method the government intends to employ to ensure that this new agency responds to public need.

The Minister says the new regulatory agency will function directly under his wing and not as a separate, independent body. It will be stripped of its investigating powers which will be vested in another body, also under his wing.

The argument can be made that such direct political control may restrict the freedom and independence of these agencies. One Minister may have the public interest at heart and he may be replaced by another who is not so inclined. What then is to transpire? The outlook is clouded with public concern.

A reply to this concern might suggest there will be an appeal process which will be adequate and accessible. The function of appealing through the courts is expensive and time-consuming. Some may argue that the high cost will be beneficial since it will discourage trivial actions. But it can also be brutal in discouraging highly significant appeals by public-spirited bodies with limited funds. Indeed, it could very well be argued that these high costs and time consumption would mainly benefit those organizations with big treasuries and highly-skilled legal departments.

Bluntly stated, such an unbalanced structure would be of vast benefit to the railways in their opposition to public groups seeking relief from high-risk rail operations. We feel this matter must be addressed at least until such time as existing risks are reduced to a reasonable level.

Some means must be found either to fund organizations in major appeal cases or install an independent appeal body or tribunal to hear appeals at minimum costs.

We feel that the appeal process must be clarified in the amending legislation for the sake of justice and public trust.

Nevertheless, M-TRAC does support the concept of separating the regulatory and investigative functions of federal transport agencies, on the grounds that the investigative body will not be beholden to the regulatory agency and, we hope, not subjected to political pressure.

In the United States the investigative body, known as the National Transportation Safety Board, is a separate government agency. Its work has been impressive. Because it is a separate body, some of its recommendations may not be readily acceptable to other sections of government which have the power of enforcement. In other words, the NTSB frequently has to fight for implementation; it must wage a subtle campaign within the government to gain support.

But the documents that emerge from NTSB investigations bear the distinctive stamp of honest and dedicated appraisal. The fact that it is a separate agency gives it an area of freedom difficult to duplicate by an agency which is directly under the wing of a Minister.

We air this argument simply as a point of debate for there are very real difficulties in structuring an investigative arm that could be subjected to very severe pressures from many directions.

If, in fact, the agency to be put in place is to be open and accessible to all Canadians, the policies of that agency must also be open to scrutiny. Public confidence cannot be assured if barriers are erected so that the policies of investigative bodies remain secret. We have a very clear example of that problem in a recent Toronto case involving the Canadian Aviation Safety Board. (See Appendix C).

A further point: decisions reached by the investigative agency requiring industry improvements must be backed up by powers of enforcement.

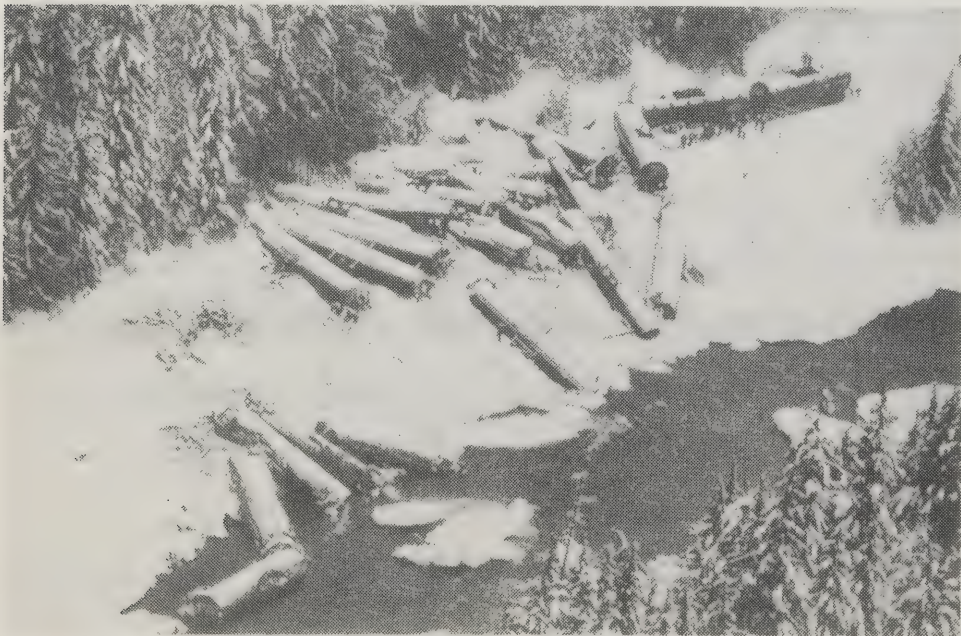
As Commissioner Magee noted in his report on the MacMillan Yard investigation, there is little point in issuing orders if there isn't the means of enforcement. In recent months there have been difficulties within the Canadian Transport Commission to obtain sufficient federal funds to provide an adequate team of rail inspectors to enforce the thrust of new safety regulations. Some of those funds were withheld, leaving holes in the manpower network.

A government argument may counter that federal funds are limited. But does that mean that safety must be rationalized? Who is the judge what priority safety must have in the period of rising traffic in dangerous goods?

Is not the 1972 pronouncement of the Transport Commission that railways must function under maximum safety the basic means of protecting the public? (See Appendix D)

Is maximum safety capable of compromise?

We suggest that in the allocation of federal funds there is no room for quibbling. Funds must be found to assure maximum safety today -- not in 1990 or 1995. We have had too many accidents in Canada involving transport systems to be lulled by complacency. Funds must be available for adequate investigation, regulations and enforcement. And the enforcement must be sufficiently stiff to deter laxity by industry.



Derailment of 95-car CN freight train spills toxic chemicals into the North Thompson River 180 km north of Kamloops, B.C. on March 4, 1982. (Photo: Canapress)

IV. Harmonizing Policies

Throughout this response we have voiced both criticism and praise for the government's intended restructuring process. We have been bruised by the faults of the existing process and look to the new structure for needed improvements.

But we are dismayed by a statement in the Freedom to Move position paper which states that one aim of the government's proposals is to harmonize the Canadian and American regulatory regimes.

What does this mean? Is Canada to follow the path of U.S. policy? Or by chance is it the intention to entice American policy to follow the clearer Canadian path?

In the first place, constitutional differences between the two countries are so sharp that complete harmony in constitutional policies is unlikely to be achieved.

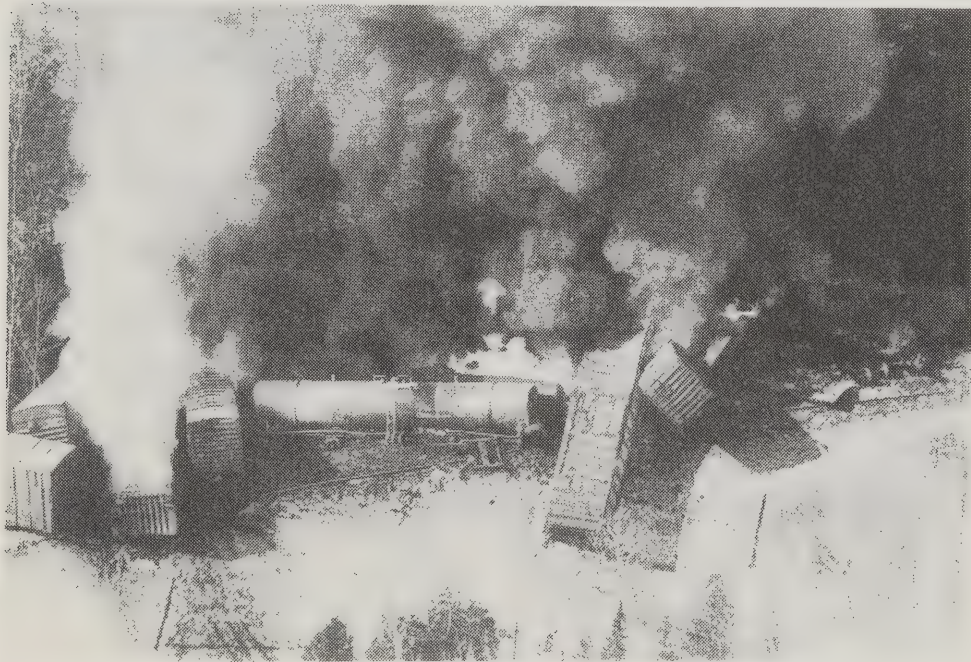
Under the American system, states and municipalities have powers to protect themselves against traffic in dangerous goods that are not available to Canadian provinces and their offspring, the cities and towns of Canada.

American municipalities have moved directly into court to win relief from the risks of such traffic. In Canada rail traffic falls under federal jurisdiction. It is the federal government which has power to order changes in railway functions. Even the traffic corridors in which the dangerous goods flow come under federal jurisdiction. Local governments can pass dozens of resolutions calling for changes in rail speeds and placarding of dangerous goods and they can mean nothing unless federal authorities pay heed.

Here we depart from established lines of thinking and throw open a suggestion: what's wrong with the federal government delegating some of its dangerous goods authority to the provinces? Surely the provinces have reached such maturity that they know what is best for their own cities and towns. If such a major area of population as Metropolitan Toronto demands a slowdown in dangerous goods rail speeds, it should have the right to protect itself and to look to the province to meet that need.

It can be reasonably argued that if each province has its own rail policies, the result could be such a hodge-podge of different speeds and other restrictions that the national well-being of Canada would suffer. Commerce crossing provincial lines becomes a matter for federal jurisdiction. Nevertheless, provinces should have the right to protect their cities. And if you are going to harmonize Canada-United States regulatory policies or regimes, the existing transborder differences on the rights and powers of cities should be addressed.

Above all, there is a real need for closer communications and policy relationships between the two countries. The flow of rail traffic across the border is very high and increasing. Similar kinds of traffic accidents may occur on both side of the border. Currently, one regulatory agency may not know immediately what problems are developing across the border or what actions are being contemplated until there is formal communication sometime thereafter.



Hundreds flee as C.P. freight train wreck sends up toxic clouds. 31 cars derailed causing massive pile-up including cars of hydrochloric acid, hydroflouric acid, naptha and lube-oil in Medonte Township, Ont. on February 28, 1982 (Photo: Globe & Mail)

What may be required is a body, probably smaller and less formal but similar to the Canada-U.S. International Joint Commission which deals with boundary waterways. If rail regimes and policies are to be harmonized or at least correlated a joint commission or similar group may be useful.

But does Canada really want to harmonize its policies with those which exist in the U.S.? The transcript and report of the RTC MacMillan Yard investigation may be worth studying. While the pressures of the Canadian rail lobby in Ottawa are very strong, they are even stronger when promoted by the larger U.S. rail industry in Washington.

Much of the actual work of designing and testing the rolling stock that operates in the United States have in essence been delegated to the rail industry. That is a fact that is hard to accept. The Association of American Railroads exercises tremendous power in the U.S. It is the AAR which decides on tank car specifications; on the quality of steel to go into tank car production; on new tank car design; on the testing of tank cars before they go into operation.

There is frank concern in Canada that the AAR is not doing an impressive job of policing its own industry. In one case, the quality of steel that went into the manufacture of a faulty tank car head was discovered out of specification but the AAR did nothing about it. Thousands of pressurized tank cars were found to be of illegal

manufacture in the United States but it took the National Transportation Safety Board to find out about it, not the AAR. The AAR tended to paint a gloss of safety assurances over tank cars which have in fact endangered lives and property.

The MacMillan Yard investigation concluded that there must be greater scrutiny of AAR decisions which affect the kind of tank cars which run on Canadian track. As for the safety record of American railways hauling dangerous goods, we suggest it is no shining example. There is looseness in the discipline of the American rail industry which, if emulated, would bring increasing problems for Canada.

This country needs a made-in-Canada rail policy, to meet Canadian needs and Canadian conditions. The quality of steel used in the manufacture of dangerous-goods tank cars must be able to withstand the rigours of Canadian winters which generally are more severe than they are in the United States. The design of pressurized tank cars must be rigidly supervised. There can be no compromise in the pursuit of measures to ensure maximum safety in the haulage of dangerous goods in Canada.

In the same way Canada must have its own research and testing facilities; its own corps of technicians, whether they are located in government bureaux, college campuses or rail centres. We should no longer have to delegate specification powers to a body located outside of Canada, although it would benefit industries on both sides of the border to exchange data leading to better tank car design.

Harmonizing Canada-U.S. regulatory regimes for the sake of improving trade deals, communications and safety practices must be commended but harmonizing these regimes for the sake of loosening discipline within the rail industry must be condemned. The environment of Canada has suffered because of loose government controls or indifference. Safety deterrence has suffered. Governments may wish to allow the railways greater economic freedom -- but not freedom which compromises safety.



Firemen fight blaze resulting from 86-car CP train derailment at Petawawa, Ont. on February 24, 1985. About 400 residents forced out of their homes in bitter cold.

V. Mending Fences

Granted, the Freedom to Move position paper has been shaped for a specific purpose: to strengthen the transport industry's ability to compete. And the argument will be raised that other transport issues can be dealt with, in another document and another time.

We suggest that in dealing with the vital transport industry, and more particularly the rail industry, economic issues cannot be separated and dealt in isolation. Every step involving deregulation must take into consideration the impact on the public -- the economic and social factors are interwoven.

Branch lines should not be abandoned holus-bolus without considering how affected communities are to be served. Rail companies may want to get out of one area because of low economic returns but may be reluctant to leave another area because of rich economic returns, no matter how risky operations in that area may be to the public.

Our stated view is that the rail industry cannot be treated simply as any other business. It has a social as well as an economic purpose. And that social purpose

involves the leaderships and the authority of the federal government.

Rail relocation is an expensive undertaking. But sometimes it must be considered as a vital expenditure. And the reluctance of railways to move has to be carefully investigated by the government.

We note particularly that in the case of Metropolitan Toronto a staff study by the Canadian Transport Commission warned of existing chemical dangers and urged at least partial relocation. The railways' argument against such a move showed, on close examination, to lack factual substance.

The railways' constant use of unsubstantiated economic argument as reasons why steps cannot be taken in directions which the railways do not want to go can only result in suspicion that the railways' over-all economic argument on all matters is dubious.

Is there really a great economic threat facing Canadian railways from across the border? Is it not a fact that a lot of Canadian rail company investment is going into American rail purchases? And into trucking?

And can it be really substantiated that if the railways don't get their way, Canadian grain may end up being hauled by American rail lines operating in Canada? What kind of nonsense is this?

What real substance is there in the constant rail company warnings that forcing rail relocation may throw the vast chemical transport business into the hands of truckers?

Why do the railways repeatedly raise this frightening spectre of huge squadrons of trucks clogging the highways with vast quantities of chlorine, toluene, liquid petroleum gas, sulphuric acid, propane, anhydrous ammonia and countless other toxic and explosive chemicals that could decimate populations within minutes?

The railways have been accused of playing a selfish and cynical game with the public in order to protect their established markets with minimum cost and maximum returns.

Rail relocation is one unresolved matter. Grade separations is another. We recall the words of Mr. Justice Samuel Grange in his report on the Mississauga derailment:

"A long, fast train is a profitable one; it is not necessarily a safe one. I accept, of course, that in the course of natural justice one does not normally make an order affecting another's rights or pocket book without giving that other a chance to be heard. But there may come a time, where the safety of the citizen is concerned, when the onus shifts. In such case the burden of proof may (perhaps should) fall upon him who creates the risk."

Who creates the risk when a long, powerful train carrying tons of deadly chemicals drives through a highly congested area at relatively high speeds? Why is the train long? Because it is cheaper. Why is the speed high? Because it is more economic. Who cares about the lives of those who live and work near the track? Who cares about the children who must cross the track on their way to and from school? Do you hear the railways mention these problems? Rarely, if ever!

But there are local authorities who are concerned. They invariably are the municipal authorities who raise their voices and get no response. They are the school boards who fear the threat of chemical spills and hold little confidence in federal reassurances. The comment has been heard that the power of the national railways is so great that they really dwarf the federal government. It may very well be asked: who runs this country, the railways or the government?

Though the railways create the risk, governments in the past have willingly picked up some of the tab. For about three-quarters of a century the federal government has been involved in elimination of rail-road grade crossings. Generous federal funding became available for grade separations. In latter years the generosity of this funding has been more of an illusion than a fact.

Because of a financial ceiling imposed on each case, the federal contribution actually declined in many urban cases to about 30 per cent rather than the stipulated 80 per cent. (See Appendix E).

Grade separations are vital in the drive to reduce rail-road accidents. Undoubtedly the federal government has limited funds available but it is unlikely that the railways would be prepared to take up the slack. This increases the burden on municipalities seeking to protect their citizens. While railways often extract huge revenues from certain municipalities, is it not their duty to put something back in?

Is urban rail safety to suffer because of the railways' mean and narrow view and the federal government's poverty? If the costs of grade separations in high-density areas are simply too high, why then should relocation of the rail lines not be contemplated? Perhaps it makes more economic sense to move the rail line to an area where fewer grade separations are required.

We earnestly appeal to the government to review its grade separation funding; to speed up decisions on funding and at least make clear to a municipality the total sum available to that area so that the municipality can plan accordingly.



B.C. Rail workers examine massive damage of freight train derailed near Prince George, B.C., July 11, 1983
(Photo: Canapress)

VI. Enforcing Regulations

In a statement accompanying the position paper Freedom to Move, Transport Canada notes that no regulatory reform will be considered that could, in any way, be detrimental to safety. And it adds that measures are being taken in the non-economic regulatory area to enhance existing standards of safety and security.

On the specific issue of ground transport, the statement refers to new regulations governing the transportation of dangerous goods which came into effect July 1, 1985. While these regulations -- long in the making -- provide some reduction in existing public risks, they are glaringly inadequate to meet the very basic needs of populations in high-density areas.

Most desperately needed is a regulation controlling the speeds of so-called EMPTY tank cars which contain explosive and toxic residues. It is widely recognized that the placard EMPTY is misleading and has been a focus of criticism by both the Canadian Association of Fire Chiefs and the International Association of Fire Chiefs.

It has taken three years of hard struggle by the M-TRAC organization to convince Ottawa authorities that the EMPTY placard should be abolished and replaced by a more factual identification. We believe this now is being done, although the planned process of completing the changeover -- a period of four or five years -- should be speeded up. And it should be done all at once, not in stages which would allow two different placards to be displayed on the same train for the same purpose.

The argument that the railways can save a little money if the process of changing the EMPTY placard is stretched over a five-year period must assuredly be unacceptable to those authorities who are sincerely dedicated to improving public safety.

In the same way the process of identifying pressurized tank cars with a one-foot-wide yellow band painted horizontally around the body of the tank car should be speeded up. Again, there is no sensible argument to stretching out the process in order to save the railways a little money.

If the public is to be protected, should there be a limitation on the length of dangerous-goods trains moving through high-density areas? In his report on the Mississauga derailment of 1979, Mr. Justice Samuel Grange touched on the possibility of a 4,000-foot limitation for public protection. Since then the average train has grown to 7,000 or 8,000 feet and there is no indication of any limitation of any kind except that which the railways may decide.

Year by year the trains are becoming heavier. This huge weight at high speeds places increasing strain on existing track, especially during the frigid winter months when steel operates in a brittle mode. Accidents resulting from what is commonly known as brittle failure can have horrifying consequences. Is it not time to start limiting the length of dangerous goods trains, at least those moving through high-density areas where residents cannot escape in time?

Another major concern is the proximity of marshalling yards to crowded work and residential areas. The increasing flow of chemical traffic in these marshalling yards has raised concern among American authorities and it stands to reason that some of the problems arising in U.S. marshalling yards may be applicable in Canada as well. The National Transportation Safety Board in Washington has concluded that vast sections of cities and towns can be threatened within minutes by accidents in nearby marshalling yards involving chemical spills.

Finally, the regulations are only as effective as they are enforceable. In his report on the MacMillan Yard investigation, former RTC Chairman John Magee raised the key issue of manpower. Inadequate manpower to back up the demands of federal regulations makes the regulations virtually useless. What good is there to say that a federal inspector can hand out a violation ticket to the railways instantaneously when, in fact, there is no inspector available?

Giving the railways the liberty of Freedom to Move should not, in our view, give them the liberty of self-policing safety regulations. The regulations should not only be sufficient to guarantee the public reasonable protection but they should be enforced and seen to be enforced by an adequate body of trained inspectors dedicated to their role of protecting the public.

We state again: the regulations as they currently exist are inadequate. There is urgent need to strengthen them and to provide sufficient manpower to back them up with warnings to the railways that violations will lead to strong disciplinary action.

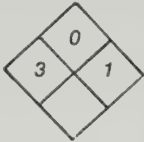
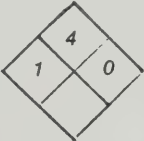
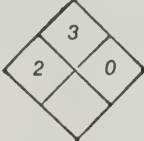
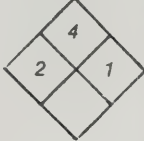


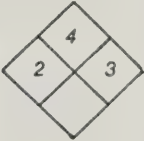



Conductor examines wreckage of derailed freight train near North Bay, Ont. on June 9, 1984. (Photo: Globe & Mail)

VII. S U M M A R Y

- Deregulation does not by itself assure rail efficiency.
- Safety principal must be imbedded in amended law.
- Dismantling of Transport Commission overdue.
- New investigative body must be free of political pressure.
- An effective appeals process should be spelled out.
- Federal grade-separation funding needs urgent upgrading.
- Current regulations inadequate to protect public.
- Marshalling yards pose danger; existing placarding poses danger.
- Chemical train speeds in cities too high; trains too long.
- Regulations would be farce without adequate enforcement.

RISKS OF SELECTED CHEMICAL HAZARDS*

Name	Formula	NFPA No. 704M**	Fire and Explosion Hazard	Life Hazard
Chlorine	Cl		Non combustible in air, but most combustible materials will burn in chlorine as they do in oxygen; flammable gases and vapors will form explosive mixture with chlorine. reacts explosively, or forms explosive compounds, with many common chemicals, especially acetylene, turpentine, ether, ammonia gas, fuel gas, hydrocarbons hydrogen and finely divided metals.	Toxic gas. Liquid chlorine will cause skin burns.
Propane	C ₃ H ₈		Liquid under pressure; highly dangerous when exposed to heat or flame. Severe explosion hazard when exposed to flame. Dangerous; can react vigorously with oxidizing materials.	An asphyxiant. At high concentration has a central nervous effect.
Toluene	C ₆ H ₅ CH ₃		Flammable liquid. Vapors form explosive mixtures with air. Liquid is lighter than water. Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. Not soluble in water.	Eye and respiratory irritant. Extreme inhalation of vapor may cause death by paralysis of the respiratory center.
Vinyl Chloride	CH ₂ CHCl		Flammable gas at ordinary temperatures. Forms explosive mixtures with air. Gas is heavier than air.	Acts as a general anesthetic anesthetic and may be fatal in high concentrations. Skin irritant. Fires involving this material result in production of highly toxic combustion such as hydrogen chloride and carbon monoxide.
Anhydrous Ammonia	NH ₃		Flammable gas. Presence of oil or other combustible materials will increase the fire hazard. Ammonia gas is lighter than air.	Causes varying degrees of irritation to eyes, skin or mucous membranes. May severely injure the respiratory membranes with possible fatal results. Liquid anhydrous ammonia causes severe burns on contact.
Styrene	C ₆ H ₅ CH=CH ₂		Flammable liquid. Vapour forms explosive mixture with air. Vapor is heavier than air and may travel considerable distance to source of ignition and flash back. If polymerization takes place in a container, there is a possibility of violent rupture of the container. Not soluble in water.	Eye and respiratory irritant. High concentrations produce anesthetic effects, and prolonged exposure to high concentrations produce systemic effects.
Ethylene Oxide	CH ₂ OCH ₂		Flammable liquid with boiling point of 51°F. Vapor forms explosive mixtures with air over wide range. Liquid is lighter than water. Vapour is heavier than air and may travel considerable distance to a source of ignition and flash back. Dangerously reactive may rearrange chemically and/or polymerize violently with evolution of heat when in contact with highly active catalytic surfaces.	Moderately toxic by inhalation; eye, skin and respiratory irritant; prolonged contact with skin may result in delayed burns.
Hydrogen Fluoride	HF		Non combustible but difficult to contain as it corrodes most substances except lead, wax, polyethylene and platinum. May generate hydrogen in contact with some metals. Soluble in water.	Highly toxic and irritating to eyes, skin and respiratory tract in both liquid and vapour states. Its sharp penetrating odor ordinarily prevents voluntary inhalation of toxic quantities. Contact with skin causes very painful and medically serious burns. Liquid contact with eyes can cause immediate blindness.

Name	Formula	NFPA No. 704M	Fire and Explosion Hazard	Life Hazard
Sulfuric Acid	H ₂ SO ₄		Not flammable but highly reactive and capable of igniting finely divided combustible materials on contact. Reacts violently with water and organic materials with evolution of heat. Extremely hazardous in contact with many materials, particularly carbides, chlorates, fulminates, nitrates, picrates, powder metals and other combustible materials. Attacks many metals releasing hydrogen.	Causes severe, deep burns to tissue, very corrosive effect. Avoid any contact.
Nitric Acid	HNO ₃		Non-combustible but dangerously reactive with many materials. Reacts explosively with metallic powders, carbides, hydrogen sulfide and turpentine. Increases the flammability of combustible, organic and readily oxidizable materials; can cause ignition of some of the materials. Soluble in water.	Fumes are toxic. Liquid causes severe tissue burns.
Methylene Chloride	CH ₂ Cl ₂		No flash point in conventional closed tester, but forms flammable vapor air mixtures at approximately 212°F or higher. Liquid is heavier than water. Slightly soluble in water.	Vapor in high concentrations may cause narcosis or death. Eye, skin, and respiratory irritant.
Methyl Chloride	CH ₃ Cl		Flammable gas. Forms flammable mixture with air. Vapor heavier than air.	Inhalation of high concentrations of methyl chloride causes serious central nervous system damage, lingering illness and sometimes death. The onset of symptoms of poisoning, such as dizziness, headache, optical difficulties, nausea and vomiting may be delayed for many hours.

* Extracted from 'Fire Protection Guide on Hazardous Materials', 4th Edition, National Fire Protection Agency, U.S.A.

** For explanation see below.

Hazardous Chemicals Data Explanatory

Hazard Identification System. The diamond-shaped diagram shown for each chemical gives at a glance a general idea of the inherent hazards of the chemical and the order of severity of these hazards. Based on the hazard identification system in "Recommended System for the Identification of the Fire Hazards of Materials, NFPA No. 704M," the diagram provides planning guidance to fire departments for safe tactical procedures in emergency operations, gives on-the-spot information to safeguard the lives of fire fighting personnel and the others who may be exposed, and provides plant design engineers, plant protection and safety personnel with a means of identifying hazardous materials and areas in which they are stored.



The diagram identifies the "health," "flammability" and "reactivity" (instability and water reactivity) of a chemical and indicates the order of severity of each hazard by use of one of five numerical gradings, from four (4), indicating the severe hazard or extreme danger, to zero (0), indicating no special hazard. In the diamond-shaped diagram "health" hazard is identified at the left, "flammability" at the top, and "reactivity" at the right. The bottom space is primarily used to identify unusual reactivity with water. A W with a line through its center alerts fire fighting personnel to the possible hazard in use of water. This bottom space may be also used to identify a radiation hazard by the symbol γ .

To supplement the spatial arrangement, NFPA No. 704M recommends the use of colored backgrounds or colored numbers to identify the hazard categories — blue for "health," red for "flammability," yellow for "reactivity." Examples of spatial arrangement and color schemes are shown on the preceding page.

For a detailed description of the hazard identification system used here, see "Recommended System for the Identification of the Fire Hazards of Materials, NFPA No. 704M, 1969 Edition."

The following paragraphs summarize the meanings of the numbers in each hazard category and explain what a number should tell fire fighting personnel about protecting themselves and how to fight fires where the hazard exists.

Health

- 4 A few whiffs of the gas or vapor could cause death; or the gas, vapor, or liquid could be fatal on penetrating the fire fighters' normal full protective clothing which is designed for resistance to heat. For most chemicals having a health 4 rating, the normal full protective clothing available to the average fire department will not provide adequate protection against skin contact with these materials. Only special protective clothing designed to protect against the specific hazard should be worn.
- 3 Materials extremely hazardous to health, but areas may be entered with extreme care. Full protective clothing, including self-contained breathing apparatus, rubber gloves, boots and bands around legs, arms and waist should be provided. No skin surface should be exposed.
- 2 Materials hazardous to health, but areas may be entered freely with self-contained breathing apparatus.
- 1 Materials only slightly hazardous to health. It may be desirable to wear self-contained breathing apparatus.
- 0 Materials which on exposure under fire conditions would offer no health hazard beyond that of ordinary combustible material.

Flammability

- 4 Very flammable gases, very volatile flammable liquids, and materials that in the form of dusts or solids readily form explosive mixtures when dispersed in air. Shut off flow of gas or liquid and keep cooling water streams on exposed tanks or containers. Use water spray carefully in the vicinity of dusts so as not to create dust clouds.

Flammability (continued)

- 3 Liquids which can be ignited under almost all normal temperature conditions. Water may be ineffective on these liquids because of their low flash points. Solids which form coarse dusts, solids in shreds or fibrous form that create flash fires, solids that burn rapidly, usually because they contain their own oxygen, and any material that ignites spontaneously at normal temperatures are included in this category.
- 2 Liquids which must be moderately heated before ignition will occur and solids that readily give off flammable vapors. Water spray may be used to extinguish the fire because the material can be cooled to below its flash point.
- 1 Materials that must be preheated before ignition can occur. Water may cause frothing of liquids with this flammability rating number if it gets below the surface of the liquid and turns to steam. However, water spray gently applied to the surface will cause a frothing which will extinguish the fire. Most combustible solids have a flammability rating of 1.
- 0 Materials that will not burn.

Reactivity

- 4 Materials which in themselves are readily capable of detonation or of explosive decomposition or of explosive reaction at normal temperatures and pressures. Includes materials which are sensitive to mechanical or localized thermal shock. If a chemical with this hazard rating is in an advanced or massive fire, the area should be evacuated.
- 3 Materials which in themselves are capable of detonation or of explosive decomposition or of explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. Includes materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without requiring heat or confinement. Fire fighting should be done from an explosion-resistant location.
- 2 Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Includes materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. Also includes those materials which may react violently with water or which may form potentially explosive mixtures with water. In advanced or massive fires, fire fighting should be done from a protected location.
- 1 Materials which in themselves are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently. Caution must be used in approaching the fire and applying water.
- 0 Materials which are normally stable even under fire exposure conditions and which are not reactive with water. Normal fire fighting procedures may be used.

TASK FORCE CRITICIZES COMMISSION

SYSTEM SAFETY OVERVIEW
RAIL TRANSPORTATION

WORKING PAPER
TO
ONTARIO TASK FORCE
ON PROVINCIAL RAIL POLICY

BY

PETER D. NOLL

MINISTRY OF TRANSPORTATION
AND COMMUNICATIONS

DANGEROUS GOODS
TRANSPORTATION OFFICE

1981

EXECUTIVE SUMMARY

Jurisdiction of the Canadian Transport Commission has been reviewed to determine the extent of duties and powers.

-It is found that adequate powers to administer the railway transportation system have been delegated to the Canadian Transport Commission and the Railway Transport Committee.

The structure and organization of the Canadian Transport Commission and Rail Transport Committee have been reviewed.

-Problems have been identified:

The measures undertaken by the regulatory body in response to the 1970 Inquiry into Rail Safety, have not been substantially effective in improving the level of public safety in line with reasonable expectations.

The regulatory body's low-key profile in using its extensive powers affirmatively, seems to result in slow progress in improving the level of public safety.

The regulatory body's extensive reliance on self-regulation by the railway companies does not seem to have produced substantial improvements in the level of public safety, in line with reasonable expectations.

The regulatory body's response to the aging of the technology employed in the Canadian railway infrastructure and rolling stock, does not seem to provide adequate and timely compensating measures to maintain a level of public safety in line with reasonable expectations.

The regulatory body seems to be slow in assessing opportunities for constructive changes to the rail transportation system which may result from technological innovations. Its level of response to such opportunities does not seem to actively encourage substantial and timely upgrading of the rail transportation environment, to achieve improved public safety.

Substantial work seems still to be required (some of it in progress) to compile minimum standards and criteria for certain vital aspects of the rail transportation environment, which could form the basis for affirmatively regulating a uniform level of safety even within the constraints of the status quo.

The CTC's ability to protect its research and development staff complement is being limited and because of constraints, subject to priority ranking by management.

There may be a conflict of interest confronting the regulatory body and its administrative staff, as they conduct accident investigations and may subsequently be required to act as a judiciary body.

Enforcement has been reviewed

-Problems have been identified:

In context with the geographic distribution of the rail transportation system in Canada and reasonable expectations regarding the level of public safety, the number of enforcement officers today is not adequate for ensuring sufficient supervision of compliance with existing CTC regulations.

The CTC's obvious reliance on railway company management to police those aspects of rail transportation which have a direct bearing on the level of public safety has not resulted in substantial improvements in this area.

There are a number of sources of recognized stature and authority in railway matters, which have interpreted respective available data to indicate a deterioration in the level of public safety.

There is a documented lack of responsive attention and follow-up action by the regulatory body, to a large number of long standing enforcement related complaints from within the railway operations environment. These complaints are in relation to the railways' internal inspection and corresponding maintenance practices for system components, which directly contribute to operations safety and therefore bear on the level of public safety.

The CTC's obvious reluctance or lack of ability to pursue violations of its regulations through prosecution, is not likely to establish a climate of high-profile attention to public safety in railway management. (Selective enforcement and prosecution can be a useful tool to focus priority attention on system wide deficiencies in those areas which can be identified to have a significant detrimental impact on public safety.)

The CTC's ability to protect its enforcement staff complement has been limited due to constraints imposed by government.

The CTC's ability to attract suitable personnel to its enforcement staff positions is limited by conditions which seem to favour personnel from the railway management classes and by unattractive levels of compensation.

System Safety has been reviewed

-Problems have been identified:

The data show that the absolute hazard generated by the rail transportation system to the Canadian public:

- 1) rose sharply in 1979 due to derailments
- 2) rose sharply in 1979 due to collisions
- 3) rose sharply in 1979 due to the presence of dangerous goods
- 4) declined slightly in 1979 relative to crossings

The Railways' Safety Program has been reviewed

-Problems have been identified:

Railway management has not succeeded in balancing the economic performance objectives with public safety objectives, to satisfy reasonable public expectations; or has failed to correctly identify or appreciate these expectations.

Railway management has biased decisions relative to operations, with strong thrusts towards more payload per transportation unit (i.e. larger cars with greater carrying capacity, longer trains, etc.), with considerable impact on the aging technology of the infrastructure, rolling stock and the traffic control and monitoring systems (i.e. greater wheel contact and impact loads, limitations on in-transit visual monitoring of running gear, etc.)

Upgrading and maintenance of the infrastructure, rolling stock, control and operating systems appear to be out of step with the demands of traffic to the extent, that reasonable public safety expectations are not being met.

Railway management is at the same time transforming the operations, infrastructure, traffic control and rolling stock monitoring and maintenance systems away from traditional staff intensive procedures. Replacement systems have been integrated relatively successfully in some instances, in others, existing systems are being curtailed or eliminated. Management of this process is not maintaining safety levels in line with reasonable expectations.

Current initiatives at the federal government level have been reviewed and their probable effect has been assessed:

The outlined federal level initiatives will have a moderate impact on absolute rail safety, due to intermodal compatibility of specifications, standards, documentation and responsibilities.

The regulatory terminology, which is in line with the Canadian standard and judicial interpretation, should ensure uniformity in judgements. Precedents established in the Courts in context with Canadian social standards and levels of expectation should ensure high levels of compliance.

The specific mandate of the Transportation of Dangerous Goods Branch of Transport Canada should cause sufficient profile to ensure resource allocations, and responsiveness to changing public expectations.

In turn this should cause upgrading of the mechanisms that ensure public safety in the transportation of dangerous goods, reasonable in step with expectations.

Opportunities for Ontario action are identified:

- A policy to ensure rerouting of dangerous goods rail traffic around Ontario population centres and restrictions on land use within a wide corridor about the rail line.
- A policy to cause dangerous goods cargoes to be consolidated in special trains (where practicable) and imposition of constraints on train operations, in terms of any one or all of route, time and speed; optionally combined with publication of traffic time tables.
- A policy to cause segregation of dangerous goods cargoes according to potential hazards due to the properties of the dangerous goods and imposition of constraints on operations which specifically address the dangerous properties of the cargo; optionally combined with the publication of traffic time tables.
- A policy to ensure limitations on quantities of dangerous goods cargoes, depending on the potential hazards due to the properties of the dangerous goods, combined with measures outlined in the other options.
- Moral suasion of the Ontario Government through the federal Minister of Transport to cause a change in CTC's regulatory and enforcement philosophy and moderation of constraints on the agency.
- In negotiation the implementation of the Transportation of Dangerous Goods Act in Ontario; the adoption of a negotiating stance which would cause the transfer of accident investigation responsibility from CTC to the Ministry of Transport.
- A negotiating stance which would provide the Ontario Government with qualified resources to ensure compliance with regulations in railway transportation, combined with a thrust to include minimum standards and performance criteria for rail cars transporting dangerous goods in regulations under the Transportation of Dangerous Goods Act.
- Investigation of the possibility of enforcement of appropriate existing Ontario legislation and regulations protecting the environment, labour, agricultural land, etc., on grounds, that conditions or actions within the railway right-of-way, on land of the Crown in Right of Ontario, violates such legislation and regulations; or the development of respective specific legislation.
- Moral suasion of the Ontario Government directed at railway management to increase the bias towards public safety objectives (as identified by the Ontario Government from time to time).

- Moral suasion of the Ontario Government to slow or reverse the trend of system changes from traditional staff intensive monitoring, maintenance and operations procedures for train consists of carrying of dangerous goods, until replacement systems are designed and proven to significantly reduce the level of absolute hazard to the Ontario public.
- Moral suasion of the Ontario Government and/or publication of criteria, to cause priority upgrading of infrastructure, rolling stock, control and operating systems in corridors where dangerous goods are transported, to such standards and performance criteria as required to ensure public safety objectives (as identified by the Ontario Government from time to time).

The development and publishing of Ontario Government safety improvement criteria for rail transportation directed at reducing the absolute hazard within a defined time frame and modified from time to time, to reflect reasonable public safety expectations as identified by the Ontario Government; and publication of information on compliance.

SAFETY BOARD'S POLICIES CHALLENGED**The Globe and Mail**

THURSDAY, AUGUST 15, 1985

Aviation board moves to prevent probe by coroner

By KEVIN MARRON

Special to The Globe and Mail

HAMILTON — A federal Government board responsible for investigating aircraft accidents has moved to prevent a probe of its own policies by a coroner's inquest.

An inquest into the death of a pilot in a mid-air collision over the Hamilton Civic Airport last year was adjourned abruptly yesterday after a court order was obtained by the Canadian Aviation Safety Board.

Bruce Garrow, a lawyer representing the board, said the inquest will be suspended until the Supreme Court of Ontario has heard a motion to prevent the coroner from asking questions about the board's policies on accident investigations and the Hamilton crash in particular.

When the inquest began earlier this week, the jury was told that a report by the safety board on its investigation of the June 21, 1984, accident has still not been made public.

Fred Campling, an assistant Crown attorney acting as counsel to the coroner, said this delay in a federal investigation may be a concern to the jury and an area it might want to make recommendations on.

A notice of motion filed with the Supreme Court states that Coroner Richard Porter exceeded his jurisdiction by his plan to devote part of the inquest to an examination of the safety board's policies.

The motion, which also wants to quash a subpoena issued to the board's director of investiga-

tions, asks that the coroner not be allowed to proceed with the inquest since he showed bias by not adjourning the inquest earlier at the board's request.

The temporary adjournment required by yesterday's court order interrupted the questioning of a federal Government air traffic controller about why the pilots of two small planes were not warned that they were on a collision course.

Both airplanes were on training missions and a trainee controller was directing air traffic when the undercarriage of a Cessna 150 smashed into the cockpit of a Piper Lance, killing its pilot, Dr. John Johns-Hill.

Air traffic controller John Newberry said the collision apparently occurred within full view of the control tower, but he did not see it.

He said his attention was focused on a Transport Canada plane, a Beech Baron, which was also on a training mission and was following the Piper Lance.

Mr. Newberry said he had

MOTION — Page M3

Court dismisses air board's bid to derail inquest

By KIRK MAKIN

The Supreme Court of Ontario has dismissed a federal aviation board's attempt to derail a coroner's inquest that had threatened to turn into an examination of the board's safety procedures.

In clearing the way for a resumption of the inquest into the death of Dr. John Johns-Hill, the court noted yesterday that a narrowing of the inquest's focus should end the dispute.

Dr. Johns-Hill, 34, was killed when a Piper Lance aircraft in which he was practicing landings collided with a Cessna over Hamilton Civic Airport last year. Both pilots were practicing landings using only instruments to guide them.

By the time the inquest was abruptly halted by an interim injunction last week, the jury had been told three planes on training missions were over the airport and a trainee was working with an air traffic controller in the tower.

The Canadian Aviation Safety Board has been working on its own investigation of the crash for several months. It took exception to Crown attorney Fred Kempling's stated intention of calling witnesses from the board and looking into its safety procedures, and argued that Coroner Richard Porter had exceeded his jurisdiction.

Moishe Reiter, the lawyer who represented the board at yesterday's court proceeding, said in an interview that the board will be satisfied if the inquest goes no further than the latest definition of its goals.

Representatives of the coroner told the court it will not look into the board's safety policies, nor will it comment on the board's investigation of the accident, he said.

Facts from the investigation will, however, be made available to the inquest, Mr. Reiter said.

"If you look at the opening statement of the coroner and the Crown attorney (at the inquest), they have shifted drastically," Mr. Reiter said yesterday. "The fear was that they would run an investigation of the investigation."

GLOBE and MAIL
AUG. 23, 1985

Extracts from —

Aug 19/85

The New York Times

Carbide Leak Highlights Defects In Systems Handling Toxic Matter

Lack of Training Cited

One reason emergency and safety systems are not given higher priority in the industry, some experts say, is that undergraduate students in chemical engineering are not required to study the subject. None of the 145 accredited undergraduate chemical engineering programs in American colleges requires a safety course as part of the curriculum, they said.

J. Charles Forman, executive director of the American Society of Chemical Engineers, which accredits chemical engineering programs, said his group will probably change its standards to require safety courses in the schools, as is the case in Britain and other developed countries. "From now on, we must put safety higher up in our hierarchy," he said.



J. Charles Forman, executive director of American Society of Chemical Engineers, said design problems in chemical plant systems would require "frightfully expensive changes." "On the other hand," he added, "they are frightfully cheap when you consider the cost of an accident."

The nuclear industry also has made wide use of failure analysis, a technique to determine which parts of a reactor system are most likely to fail. The weakest links can then be upgraded. Some chemical companies have introduced such practices, but they are not industry-wide, chemical consultants said.

"They have been slow to catch on," said Dr. Forman of the American Society of Chemical Engineers. Promoting such analysis, called hazard evaluation in the chemical industry, is the first project of the society's new Center for Chemical Plant Safety, started after the Bhopal accident, he said.

Where C.E. & A.C., U of T, lead the U.S. may "catch on" and follow.

INITIAL REPORT OF THE RAILWAY SAFETY INQUIRY

CANADIAN TRANSPORT COMMISSION



COMMISSION CANADIENNE DES TRANSPORTS

RAILWAY TRANSPORT COMMITTEE

INITIAL REPORT OF THE RAILWAY SAFETY INQUIRYINTRODUCTION

Among the duties imposed upon it by the Railway Act and the National Transportation Act, the Railway Transport Committee has the obligation of ensuring that all railway operations in Canada are carried out in maximum safety.

Between 1967 and 1970 the Committee had watched with growing concern an increase in the number of serious accidents on Canadian railways. This gave cause for anxiety, not solely in absolute terms, but also because accidents involving modern, heavier tonnage trains were of correspondingly greater magnitude than had been the case in the past. Another factor of grave concern was the rapidly increasing involvement in railway accidents of cars carrying a wide variety of dangerous commodities whose cargo, if accidentally released, could pose a serious hazard not only to railway employees but also to the lives and property of the public.

Early in 1970 it became apparent that the increase in accidents which began in 1967 was not of a transitory, but

Complicated, technical rules of law are involved, including those affecting the rights of individuals who share responsibility for railway accidents, and for this reason the Committee heard legal argument from counsel for CRLA and for the railways, and will issue its ruling on this question in the near future.

(signed)
D.H. JONES

Chairman

(signed)
J.M. WOODARD

Commissioner

(signed)
RAY MARCH

Commissioner

OTTAWA, April 19, 1972.

PROPOSED FEDERAL POLICY ON RAILWAY GRADE SEPARATIONS

by Commissioner Sam Cass
Roads and Traffic Department
The Municipality of Metropolitan Toronto

Intent of Policy

The intention of this policy is to make clear the Federal Government's position in respect to the construction of railway grade separations with urban roads. This policy will specify the financial participation that the Federal Government intends and the procedural and administrative improvements to overcome the concerns that have been expressed over the last few years.

Background

The Federal Government has been involved in the elimination of at grade crossings between railways and roads since 1909. At that time the Railway Grade Crossing Fund was introduced under the provisions of the Railway Act. In 1958 the Act was amended to increase the Federal Government's contributions toward the construction of grade separations. In 1974 Bill C27, The Railway Relocation and Crossing Act, was passed which broadened the concept of Federal Government assistance in respect to railway grade separations and similar facilities and which again increased the proportion of funding by the Federal Government.

In 1978, the Federal Minister of Transport implemented a Five Year Urban Transportation Assistance Program (UTAP) which effectively superseded the funding arrangements of Bill C27 but retained the procedural and regulatory aspects of the Act including the same formula for grade separation contributions. This program was intended to last five years after which a new program was to be instituted. To date the new program is still in

abeyance and the old program, although it was originally funded for a period of five years, has been extended, on a year at a time basis, for two years, without any increase in the total funds for the program.

Financial Contributions

The Federal Government's role in the financial participation of the cost of railway grade separations has always appeared to be very generous in view of the substantial percentage of the total cost which it was intended to be paid by the Federal Government; however, in reality, this generosity was one of perception but not of actuality in view of the ceilings or limits that had been imposed on the contribution by the Federal Government. For example, the 1958 amendment to the Railway Grade Crossing Fund provided for an 80% contribution to new grade separations; however, in the 1970's, due to the \$500,000.00 limit on the total cost towards which contributions would be made, the actual contribution represented only 30% of the cost for such grade separations that were constructed in the Metropolitan Toronto Area. The Federal Government's participation in the Railway Grade Separation Program should not be founded on such illusions but rather on reality. Therefore, in the future, the Government should stipulate what its proportional contribution would be and not diminish this proportion by means of a ceiling on the total cost of the grade separation. It is understood that the Federal Government would have limitations on the amount of funds available for such programs. In this regard it would be preferable to put a limit on the total amount of contributions in any one year to any municipality rather than to limit unreasonably the price of a facility towards which it would make a

Aministrative Procedure

The administrative procedure for a municipality to gain approval for the Federal portion of the funding for a railway grade separation has become most cumbersome and time consuming. At the present time under the UTAP program application must be made both to the CTC for approval of the project and to the Province, through the Minister of Transportation and Communication, for the funding. The Canadian Transport Commission then forwards the application to Transport Canada, with their recommendations. Experience has shown that this procedure has taken no less than one year and times, often more than two years before an approval has been received by a municipality. This does not permit appropriate fiscal planning by the municipality since it cannot be assured that the approval would be received in any specific fiscal year. Furthermore, it fails to recognize the real safety hazards which such delay permits to exist in the interim.

Policy

The Federal Government, having accepted its responsibility to share in the program towards the elimination of railway crossings on urban streets, should now take such action as is necessary to ensure that its proportional contribution in regard to any specific railway grade crossing project acutally be paid. This would require the elimination of the arbitrary ceiling which tends to reduce the actual federal portion of the cost.

Secondly, the Government should ensure that the administrative procedure be made much more efficient in order to reduce the unnecessary time delay between the application by an urban municipality for a railway grade separation and its approval to proceed with the program.

The policy in respect to financial participation should specify a percentage of involvement by the Federal Government with no ceiling attached to the cost of the railway grade separation; however, in order to assure appropriate fiscal planning, the Federal Government would be in order if it establishes a maximum annual ceiling to its total grants in respect to any municipality. Consideration should be given by the Federal Government to making such a limited amount available unconditionally to the municipality to be used as the Federal proportion of such costs with regard to railway grade separations which the municipality might incur during any one year.

To make such a policy workable it would be necessary to eliminate most of the administrative restraints which now introduce extensive delays in the procedure. There is no reason why the Federal Government could not respond to any application for the implementation of a grade separation within ninety days of the receipt of such an application. Changes to the administrative procedure should be an important part of the new policy in order to effectively achieve this goal.

